



RECEIVED

JUN 8 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Confirmation No.: 64707H CENTER 2800

Chihiro UCHIBORI

Art Unit: 2825

Serial No.: 09/648,750

Examiner: G. Lee

Filed: August 28, 2000

Docket No.: 108077-00000

For: METAL INTERCONNECTION, SEMICONDUCTOR DEVICE, METHOD  
FOR FORMING METAL INTERCONNECTION AND METHOD FOR  
FABRICATING SEMICONDUCTOR DEVICE

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

June 2, 2004

Sir:

Pursuant to 37 CFR §1.56, the attention of the Patent and Trademark Office is hereby directed to the information items listed on the attached PTO-1449. Unless otherwise indicated herein, one copy of each item is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the items be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

— 1. This Information Disclosure Statement is being filed (a) within three months of the U.S. filing date, OR (b) before the mailing date of a first Office Action on the merits in the present application, OR (c) accompanies a Request for Continued Examination. No certification or fee is required.

**XX** 2. This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection or Notice of Allowance.

**XX** a. I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(1).

— b. I hereby certify that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(2).

— c. A check in the amount of \$180.00 in payment of the fee under 37 CFR §1.17(p). Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300 as needed to ensure consideration of the disclosed information.

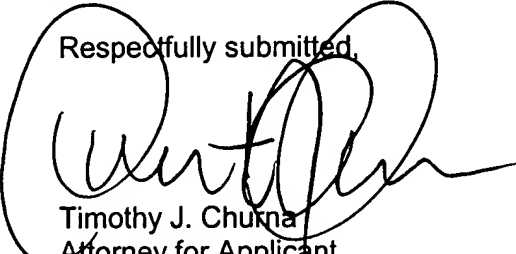
— 3. This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Applicant(s) hereby petition(s) that the Information Disclosure Statement be considered. Attached is our check in the amount of \$180.00 in payment of the petition fee under 37 CFR §1.17(i)(1). Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300 as needed to ensure consideration of the disclosed information.

— a. I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(1).

— b. I hereby certify that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(2).

**XX** 4. English language references are attached hereto.

Respectfully submitted,

  
Timothy J. Chuma  
Attorney for Applicant  
Registration No. 48,340

Customer No. **004372**  
ARENT FOX, PLLC  
1050 Connecticut Avenue, N.W., Suite 400  
Washington, D.C. 20036-5339  
Tel: (202) 857-6000  
Fax: (202) 638-4810  
TJC/klf

Enclosure: German Office Action Dated March 10, 2004

FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

SERIAL NO.

108077-00000

09/648,750

## LIST OF REFERENCES CITED BY APPLICANT

(Use several sheets if necessary)

APPLICANT

UCHIBORI

FILING DATE

August 28, 2000

GROUP

2825

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
	AG						
	AH						
	AI						
	AJ						
	AK						
	AL						

## OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	AM	Kwak, et al. "Improvement of Ta Diffusion barrier performance in Cu Metallization by Insertion of a thin Zr Layer into Ta Film" Appl. Phys., Lett. Vol. 72, pp. 2832-2834
	AN	
	AO	

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.